

THE INFLUENCE OF *AZOTOBACTER* GENUS BACTERIA ON THE GROWTH CHARACTERISTICS OF TOMATO CULTIVARS BALLAD

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The use of environmentally friendly means of stimulation of plant growth is a promising area of microbiology and biotechnology. In this regard, there were widely used *Azotobacter* – bacteria isolated from the soil and preparations based on them.

The aim was to study the biological properties of bacteria of the genus *Azotobacter*, isolated from the Black Sea bottom sediments and their influence on growth characteristics tomato varieties Ballad.

From the sediments of the Black Sea there were allocated 2 strains of bacteria of genus *Azotobacter*, which based on the study basic biological properties identified as the species *Azotobacter vinelandii* and *Azotobacter beijerinckii*. The received results show the positive influence of the strain *Azotobacter vinelandii* 14 and *Azotobacter beijerinckii* 16 on seed germination of tomato varieties Ballad. On the to treatment of seeds suspension cultures of *Azotobacter* there were increased the tomato germination, germination energy and improved the growth characteristics of shoots: the length of the main root, the number and length of lateral roots, the length of the stem

Based on the study of the main biological properties (morphological, cultural, physiological and biochemical) two strains of bacteria isolated from sediments of the Black Sea, identified as bacteria of *Azotobacter*, presented by species *Azotobacter beijerinckii* and *Azotobacter vinelandii*.

Conclusion:

- Preplanting treatment of tomato seed by suspensions strains *Azotobacter beijerinckii* 16 and *Azotobacter vinelandii* 14 increased germination energy and germination of seeds by 16% and 14%, respectively, compared with the control.
- The average length of the roots of tomato seedlings increased after treatment with 16 *Azotobacter* strain suspensions in three - four times, and with the strain *Azotobacter* 14th one and a half times compared with the control.
- The average number of lateral roots of one seedling, their length and the average length of the stem tomato variety Ballad increased after treatment with *Azotobacter* cultures in two - three times compared to the control.
- Suspensions of the strains *Azotobacter vinelandii* 14 and *Azotobacter beijerinckii* 16 at the concentration of 2% most effectively influences the growth characteristics of tomato varieties Ballad.